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EXAMINER

KEITH, JACK W

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,983

Applicant(s)

IWAMURA ET AL.

Examiner

Jack W. Keith

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NEW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-6 and 10-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-6 and 10-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/29/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments have been fully considered but are unpersuasive.

The rejections of the prior Office action have been included below to include newly added claims 10-16.

Applicant argues the outstanding 112, first paragraph and 101 rejections citing that the articles cited by the examiner are directed to cold fusion. Most of said articles relating to the credibility of cold fusion with regard to the "Utah Experiment". The "Utah Experiment" being the first report of cold fusion. Applicants' argues that his device , a nuclide transmutation device, is *believed to be completely different* [emphasis added by examiner] from that of the "Utah Experiment". Thus, applicants' argue that the cited references are not related to the present invention.

This is not persuasive. Directing applicant's attention to the first Office action, particularly page 5, paragraph 2, wherein:

This concept of producing "nuclide transmutation" or "EINR" is considered as being based on the "cold fusion" concept set forth by Fleischmann and Pons (see the 3/24/89 article by D. Braaton)(also see specification page 1, lines 20+). **This is further attested to by Moore (see the 7/14/2003 article by B. Moore) wherein EINR is identified as being based upon the concept set forth by Fleischmann and Pons.** While Fleischmann and Pons relied on electrolysis of heavy water to incorporate deuterium into a solid metal lattice, it was also known that deuterium could be incorporated into the metal by non-electrolytic means (e.g., gaseous, plasma, etc.).

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Note the examiner has clearly set forth how and in what manner applicants' invention is perceived/identified in the prior art. That is EINR (applicants' claimed electron-induced nuclear reactions) is none-other-than "cold fusion". As previously set forth in the prior Office action merely proposing a new or different theory to account for the alleged production of nuclear reaction products (including large amounts of generated energy, transmutation, etc.) in such systems wherein deuterium has been incorporated into a metal lattice, does not change such systems into non-cold fusion systems.

Per the prior Office action the examiner has clearly shown the relation between applicants' invention and that of "cold fusion.

Applicants further address the operability of their invention by providing Exhibits A-C. While these documents are dated after the application at hand the fact remains that the present inventors contributed to all of the exhibits. No independent, unbiased source was solicited. Note that "reproducibility" must go beyond one's own lab.

As to the issue of reproducibility, note the following comments by Huizenga (IV) under the heading Reproducibility:

"The foundation of science requires experimental results to be reproducible. Validation is an integral part of the scientific process. Scientists are obligated to write articles in ways that allow observations to be replicated. Instructions should be available to permit a competent and well-equipped scientist to perform the experiment and obtain essentially the same results. Replication in science usually is reserved for experiments of special importance or experiments that conflict with an accepted body of work. The greater the implication of an experimental result, the more quickly it will be checked by other scientists.

As more and more groups at major universities and national laboratories were unable to replicate either the claimed excess heat or fusion products, proponents of cold fusion quickly pointed out that the experiment was not done properly: one needed different size palladium cathodes, longer electrolysis times, and higher currents, they claimed.

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Whenever the inability of qualified scientists to repeat an experiment is met by ad hoc excuses, beware. One important role of a scientific article is to provide directions for others. Scientists establish priorities for their discoveries by publishing a clear and well documented recipe of their experimental procedures. If a scientific article fails to include an adequate recipe, which allows a skilled reader to reproduce the experiment, it is a warning that the author's understanding of their work is incomplete.

Cold-fusion proponents introduced new dimensions into the subject of reproducibility in science. Some tried to turn the tables on reproducibility by giving irreproducibility a degree of respectability. A second aberration was to assign a different value to experiments attempting replication. Only experiments that obtain some fragmentary evidence for cold fusion were to be taken seriously because it was declared that experiments obtaining negative results required no special skills or expertise. This viewpoint led proponents of cold fusion to invite mainly papers reporting positive results when organizing conferences. Such an aberrant procedure is incompatible with the scientific process and usually is viewed negatively by scientists as well as journalists." (Underlining added).

Again "reproducibility" must go beyond one's own lab. One must produce a set of instructions, a recipe, that would enable anyone in their own independent lab, to produce the same results. If reproducibility only occurs in one's own lab, errors (such as systematic errors) would be suspect.

As a further issue in regard to reproducibility, experimenters who previously found evidence of excess heat, found no evidence of excess heat when better calorimetric equipment was used (see section 2.2 on page 2 of Morrison (IV) (note that such refers to the work at HVIRA (Japan)).

It is considered elementary that identical structures operated in identical manners, must produce identical results. Such is even relied on in one's everyday life.

If instrumentation, etc., indicates that identical structures operated in identical manners do not produce identical results, clearly, one of two things is implied:

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1. The presumed identical structures actually are not identical, i.e. one of said structures actually has something additional, some critical feature not found in the other said structures, which causes said one of said structures to produce the positive results.

2. The structure actually are identical, however, instrumentation, etc., is producing spurious results leading to the erroneous conclusion that one or even some or all of said identical structures, are producing positive results.

Note again the comments in section 2.2 on page 2 of Morrison (IV) concerning experimenters who had previously found what was considered as being evidence of excess heat but, who subsequently found no evidence of excess heat when they used better calorimetric equipment.

If however, it is actually something additional, some critical feature, which causes some of these cold fusion systems to produce actual, positive results whereas otherwise identical systems do not, then clearly, this "something additional", this critical feature, must be clearly specified so as to enable the artisan to make and use the invention as required by statute.

Reproducibility of the alleged positive cold fusion results is clearly a critical feature in determining if a disclosure adequately teaches the artisan how to make and use an invention for its disclosed purpose.

Accordingly, the logical conclusion when one does not get identical results and/or the results are not reproducible at will in these cold fusion experiments, is that the alleged positive results are not real but instead, they are due to experimental errors, instrumentation errors, misinterpretation of results, etc.

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Clearly, when an artisan or experimenter is relying on the experimental results of a particular experiment(s) to establish certain facts, it is incumbent upon the experimenter to show that the alleged experimental results are valid and not just the result of experimental errors (and that the alleged experimental results are valid and not just the results of experimental errors (and that the alleged experimental results do not fall within the limits of experimental errors)).

This is especially so when the experiments in question are (as here) in a field wherein the scientific community in general considers the alleged positive experimental results to be erroneous.

For a discussion of errors arising in cold fusion tests or experiments, note for example, the book, "Too Hot To Handle", by Frank Close. Pages 259-263 of this book set forth various errors that can occur, leading to the erroneous conclusion that excess power was produced in the cold fusion experiments. Page 261 of this book contains the telling statement:

"In addition to these experimental problems there were several examples where the numeral evaluation of the data and assessment of error were incorrectly or badly done or, in some cases, not done at all...

The DOE panel commented that there had been a noticeable lack of attention to the statistical assessment of errors, and that in some cases, where heat as being claimed, a group's claim of excess heat is not supported with results of sufficient precision to allow such a conclusion. More usually it is not possible to assess precision from reported results because the result is reported from a single run and no error bars are provided for the measured parameters....

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The DOE panel noted: 'Conclusions in this area simply cannot be accepted without a through assessment of the measurement errors. In its visits and conversations the members of the panel were struck repeatedly by the absence of critical assessments of this kind.'" (Underlining added).

It was and it remains the examiners position that an undue amount of experimentation would be required to produce an operative embodiment of applicants invention. The examiner has cited numerous documents showing that experimenters having obtained negative results using various types of cold fusion apparatus, all based on the cold fusion concepts set forth by Fleischmann and Pons.

This issue of undue experimentation has been succinctly addressed by Douglas Morrison at the Fourth International Conference on Cold Fusion Technology, (ICCF-4) held Dec. 6-9, 1993 in Hawaii (reproduced in transaction of Fusion Technology vol. 26, Dec. 1994), see page 54 which states:

IX. WHEN A COLD FUSION WORKING DEVICE?

8 December 1993; the previous speaker, Dr. H. Fox, giving he said, a business man's point of view, declared he expected a working Cold Fusion device in 20 years.

November 1993, Dr. S. Pons said that by the year 2000 there should be a household power plant - 6 years.

1992, Dr. M. Fleischmann said a 10 to 20 Kilowatt power plant should be operational in one year.

July 1989, The Desert News published an article by JoAnn Jacobsen-Wells who interviewed Dr. S. Pons. There is a photograph in color, of Dr. Pons beside an simple apparatus with two tubes, one for cold water in and one for hot water out. This working unit based on Cold Fusion was described as "It couldn't take care of the family's electrical needs, but it certainly could provide them with hot water year-round" said Pons.

Later in the article it was written "Simply put, in its current state, it could provide boiling water for a cup of tea."

Time delay to this working model - Zero years.

Thus it appears that as time passes the delay to realization of a working model increases.

X. CONCLUSION

No conclusions are presented - everyone can judge for themselves. However some questions can be asked;

Are Cold Fusion results consistent in claiming Cold Fusion effects in Deuterium but not in normal Hydrogen, while other groups claim Cold Fusion effects with hydrogen?

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Is the ratio of tritium to neutron production about unity as Fleischmann and Pons originally claimed [5] or is the ratio in the wide range 104-109 as most other workers claim?
Are transmutation, Black Holes, Biology [18] part of the normal world of Cold Fusion?

To explain the null experiments there is one theory-the conventional theory of Quantum Mechanics, but that are a widely variety of theories to explain positive Cold Fusion results - can they all be valid simultaneously - if not, which should be rejected?

Note that the examiner has held applicants disclosure to be insufficient and non-enabling for several reasons, including, the failure to set forth parameters of an operative embodiment of the invention, since those of ordinary skill in this art, do not know what these values should be (e.g. see pages 12+ of the prior Office action).

The present case is considered analogous to that in In re Chilowsky, 134 USPQ 515 wherein the court held the disclosure to be insufficient. In the present case (despite applicants arguments to the contrary), the examiner has shown that various necessary parameters have not been provided and, the examiner has provided evidence that the artisan does not know the requisite parameters of an operative cold fusion system, nor how to make and use an operative cold fusion system.

Note in this respect, the Court's statement on page 519 of In re Chilowsky:

"Chilowsky could not start to describe his invention with the assumption that those skilled in the art knew in detail how to build his nuclear reactor. Since it was a major part of what he purported to have invented, it was incumbent on him, under section 112, to tell how to build it, under principles of patent law too elementary to require discussion".

As noted above, applicant on page I of the 11/9/98 response, states that "some investigators" have now been able to obtain positive results.

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While "some investigators" have alleged the obtainment of positive results over the years since the initial public announcement by Fleischmann and Pons of their experiments in 1989, the scientific community in general still considers the alleged positive results as being based on experimental errors or misinterpretation of experimental data.

It is noted in this respect that there has essentially been a continuing stream of publications showing that virtually none of the scientific community consider the alleged positive results of cold fusion experiments as being confirmed. While being cumulative to the references already cited in said section 2 of the 8/10/98 Office action, a representative sampling of said subsequent publications is set forth below. In this respect, applicants attention is directed to Merriman et al, Ewing et al, Albagli et al, Bosch et al, Balke et al, Fleming et al, Henderson et al, NOVA, Huizenga (I), Huizenga (II), Huizenga (III), Huizenga (IV), and Rogers et al. These references provide further clear evidence that no excess heat is generated in such "cold fusion" systems nor is there any evidence of nuclear reactions taking place.

There have been some Japanese claims of positive cold fusion results, however, note in this respect, the comments by David Williams in the Hadifeld article on page 10 of the 10/31/92 issue of New Scientist. David Williams (head of the department of chemistry of University College London) described in claims as "absolutely pie-in-the-sky".

The article by Williams et al refers to some of the spurious effects which have led to the claims of the existence of cold fusion. Note that Williams et al found no evidence of nuclear fusion in a non-equilibrium or pulsed system (e.g. see pages 378, 380, 383).

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Note that in addition to Williams et al, the examiner has cited documents showing how experimental data, etc., can be misinterpreted as providing evidence of the operability of cold fusion systems.

In this respect, the television show on NOVA entitled, "Confusion in a Jar", indicated that in these cold fusion experiments, it is fairly easy to get quick results which could be "interpreted" as providing evidence of "cold fusion" but that in very carefully run experiments which were rechecked, etc., such as by using several different methods and/or detectors to attempt to detect the same presumed experimental results, the end result was negative.

Note the analysis of calorimetry with electrolytic cells of the Fleischmann and Pons type, set forth in Wilson et al.

In this same vein, note the negative comments in Morrison (III) regarding the claims by Fleischmann and Pons, of excess enthalpy in their cold fusion cells which were made to boil.

The Broad article in the 3/17/91 issue of the New York times indicates some of the data relied on by Fleischmann and Pons as showing evidence of fusion was faulty.

The article by Taubes on pages 1299-1304 of the 6/15/90 issue of Science, explains why the alleged detection of tritium at Texas A & M cannot be relied on as evidence of "cold fusion" actually taking place.

The examiner in the prior Office action presented issues (Shanahan e-mails (7/2002)) pertinent to the enablement of applicant's invention. That is purity to five

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nines, contamination, SIMS, XPS, etc. Applicant did not address any of the issues raised. Again within the art there consists disagreement to the operability of applicant's invention. Reproducibility must go beyond one's own lab to be credible.

The Dagani article in the 1/14/91 issue of C & EN states that the "cold fusion" claims are taken seriously by virtually none of the scientific community and that research at Utah's National Cold Fusion Institute (NCFI) as well as research elsewhere, have failed to establish the existence of cold fusion.

A more recent article by Dagani (in the 6/14/93 issue of C & EN) entitled "Latest cold Fusion Results Fail to Win over Skeptics", states that "the vast majority of scientists... dismissed the evidence of nuclear fusion results inside a metal lattice as nonsense - a case study in pathological science".

A more recent article by Dagani (in the 6/14/93 issue of C & EN) entitled "Latest cold Fusion Results Fail to Win over Skeptics", states that "the vast majority of scientists... dismissed the evidence of nuclear fusion results inside a metal lattice as nonsense - a case study in pathological science".

Note that Jones et al were also doing work on cold fusion involving the incorporation of deuterium into a hydrogen absorbing lattice. While Jones initially reported positive cold fusion results (the production of neutrons), and thus could be considered as a proponent of cold fusion, it is interesting to note some more recent statements by Jones on the issue of nuclear reactions and excess heat in these cold fusion systems.

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This apparent transformation of Jones from a "cold fusion believer" to "skeptic" is discussed by Dagani in the June 5, 1995 issue of C & EN.

In a 1992 article in Surface and Coating Technology, Jones take the position that the claims of excess heat, tritium and helium production due to nuclear reactions are "dubious to say the least" (note page 288) because there is no evidence of commensurate nuclear products. Note the reference to $E=mc^2$ on page 286.

In the Taylor et al article (co-authored by Jones), which was submitted to the Fourth International Conf. On Cold Fusion (held Dec. 1993), it is stated in regard to the detection of neutrons from their cold fusion experiments, "The results do not provide compelling evidence of neutron production" (note particularly the abstract and pages 6, 7, 9, 10).

Jones et al (II) and Jones et al (III), in J. Phys. Chem, vol. 99, (1995) on pages 6966-6973 and, pages 6973-6979 respectively, set forth reasons why the alleged obtainment of excess heat in cold fusion systems, can not be relied on as valid.

Taubes, "Bad Science: The Short Life and Weird times of Cold Fusion", 1993, is a good reference for showing the view point of the scientific majority towards cold fusion. After interviewing over 250 people in the field, Taubes concluded that "Cold Fusion ... did not exist", and "As long as financial support could be found, the research would continue.... In fact, the few researchers still working in the field would have little incentive to acknowledge negative results as valid, because such recognition would only cut off their funds". Note page 426.

Another good reference presenting a compilation and analysis of cold fusion work subsequent to the 1989 announcement of the cold fusion claims of Fleischmann and Pons, is the book, "Cold Fusion: The Scientific Fiasco of the Century", by Huizenga

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(I). Huizenga was co-chairman of the DOE/ERAB panel on cold fusion. Note particularly the "Epilogue" on pages 237-287 which discusses some of the alleged positive results presented at the First, Second and Third Conference on Cold Fusion. Jones (referred to above) refers to Huizenga's book as "factual and hard hitting... The continuing cold fusion saga is a fascinating one from a human point of view, and Huizenga tells it well... I recommend Huizenga's book to all" (see the back cover and, page 105 of Huizenga (I)).

On pages 201+(and more particularly, page 214) Huizenga (I) indicates cold fusion can qualify or be characterized as "pathological science", defined as "the science of things that aren't so" (see also Huizenga (II), Huizenga (IV), Morrison (II and Rousseau in this respect).

On page 206, Huizenga (I) states that some of the similarities between cold fusion and other unsubstantiated concepts, are:

3. Lack of control experiments,
4. statistical uncertainties,
5. irreproducibility and
6. the public description as a "simple experiment"

Note particularly pages 125, 222, 223, of Huizenga (I) which refer to the lack of reproducibility of the alleged "positive" cold fusion results.

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Clearly if something cannot be reproduced at will, there is also, then, no enabling disclosure which would enable one of ordinary skill in the art, to make and use it, as required by statute (35 USC 112).

For an even more up to date analysis of the work in this cold fusion field, attention is directed to the MEMO (dated 10/9/97) from Bennett Miller to Dr. Robert W. Bass.

The Miller Memo indicates Dr. Bass had requested the Department of Energy to do a new, full-scale review of the Cold Fusion/Low Energy Nuclear Transmutations (CFALENT) phenomena because of what Dr. Bass considered to be "emerging evidence of progress".

The Miller Memo indicates DOE's response was to commission Mr. Miller to do the review.

Page 3 of the Miller Memo indicates the vast amount of documents, etc. reviewed and considered by Miller in arriving at his conclusions.

Basically, the conclusion of the Miller Memo is that there is still no concrete evidence of excess heat, etc. Note particularly the following excerpts from the Miller Memo:

"The core problem that I have with CFALENT is the disconnect between the public pronouncements of it's proponents regarding the imminent commercial availability (nay, already established commercial availability if I am to believe the press clippings) of such systems and the somewhat more private and negative developments that seem to emerge at every turn.

Most prominent, but still only three among many such examples of the former, are first, the Cincinnati Group's recent representations regarding a revolutionary approach to the nuclear waste remediation problem --- representations that you openly endorsed as revealed truth; second CETI's equally bold guarantee of a CF cell that put out a neutronic, excess heat on a reliable, predictable basis. And third, your vouching to me, some time ago, for the imminent, commercial installation and operation of a CF power system in a hotel/resort complex that is currently under construction.

Moreover, the casual reader, picking up any issue of Infinite Energy, for example, would be hard pressed not to conclude the CFALENT is a closed matter as far as demonstrating scientific feasibility is concerned. Around the world, governments and industries are successfully demonstrating the

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phenomena of excess heat, at the very least. If so, no further development, let alone research, is needed or desired. What possible should or could your governments' federal research and development community play when its charter is to support primarily that work that the private sector can not or will not do on its own?

At the same time of course, more careful attention to what is going on suggests that not all is what it seems to be. The CG approach to nuclear transmutation is at best mired in controversy of the most basic sort. There is no verification of initial claims. There is no explanation of the basic process. A recent attempt to verify the process by a third party in one of DOE's national laboratories was, in everyone's opinion, a failure; though it can be argued that the test were inconclusive for a number of reasons. The CETI cell has similar problems. The hotel project with the 500 kw CF power plant, about which you we were so enthusiastic, has been delayed indefinitely. And, the Japanese have terminated their three-year multi-million dollar effort to demonstrate and commercialize cold fusion.

Perhaps this evidence that all is not well can be explained by sloppy science, or just complicated science, or financial difficulties unrelated to science, or by governmental mismanagement, or by pressure to move in different directions, though in the case of Japan that is hard to believe. Your assertion that the Japanese government has applied pressure internally to disband the effort flies in the face of all logic.

If any nation accords energy matter's a higher priority than the Japanese, I do not know of it. If cold fusion is real, demonstrable, or reproducible it would mean more to the Japanese than any other industrialized nation. It would be a harbinger of the ultimate energy security that they have been seeking for the past 70 years -- a security of energy supply that was one, if not the most, important determinant of their willingness to go to war in 1941. What possible motive could there be to disbanding an effort that advocates of CF/LENT expected to succeed, except that perhaps it was not?

In fact it is my current understanding that the NHE program was disbanded precisely because it could not meet its primary objective of a concrete demonstration of excess heat, even after three years of work and an expenditure of over \$30 million. There have been claims made that the effort was poorly managed -- that emphasis was incorrectly given to building a precommercial infrastructure at the expense of doing the science that needed to be done. If so, that is truly a sad state of affairs. But if it is true, I believe it will be corrected in fairly short order if for no other reason than that the stakes are so large. Nonetheless, the effort by a major industrial nation to mount a successful, ministry-sponsored, CF program can not be characterized as any thing other than a failure at this point.

This line of inquiry brings us back to the fundamental dilemma. If CF/LENT is as real as some of the scientific results presented at respected scientific meetings (or as real as its press clippings), then it is already well beyond the stage where federal tax dollars are needed. It is a commercial reality, or so close that the private sector should be jumping at the business opportunity of a lifetime-- the opportunity to capitalize on a discovery of momentous proportions that is relatively uncluttered by government claims to prior knowledge or prior invention.

If on the other hand CFALENT is still in the nascent stage where nothing is really clear and where the prospect still exists that all is artifact and anecdote, then there is only one prudent course for practitioners to follow -- go back to basics and systematically subject the phenomena to careful examination by the time -tested process of merit-based, peer-review.

I believe, as I have already stated, that I think there are good things to be done in this arena.

New ground to be broken. New discoveries to be made. New industries created. But only after the basic science has been illuminated and accepted by the scientific community at large. That is how we, as a nation, have built the greatest scientific establishment in the world. I urge you and your colleagues to accept the challenge. Come forward. Present proposals. Abide by the process."

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Further note the court decision on cold fusion in Italy (e.g. see Italy-Cold Fusion & Judge's Verdict).

Accordingly, the references cited above and in the prior Office action are considered as providing irrefutable evidence of the inoperability of a "cold fusion" system of the type set forth by Fleischmann and Pons, as well as that of applicant. Applicant has not shown this evidence to be in error.

Note that these references cited by the examiner show how experimental data, etc. can be misinterpreted as providing evidence of the operability of cold fusion systems.

Accordingly, all of the issues set forth in the prior Office action are still pertinent in determining the patentability of applicants' claims.

The Board decision in Ex parte Dash, 27 USPQ 2d 1481 is considered pertinent here.

"The Board in Ex parte Dash, held that the examiner did not error in rejecting claims for "cold fusion" of nuclear energy for lack of enablement under 35 USC 112, and as inoperative and lacking utility under 35 USC 101, since evidence demonstrating that neither excess heat nor traditional nuclear by products of fusion reaction have been detected by careful researchers conducting experiments under conditions that are highly analogous to applicants' electrolytic cell, and demonstrating relative ease with which erroneous results can be achieved by failing to observe strict experiment design controls shifted burden of proof to applicants, and applicants failed to produce any evidence to overcome examiner's position."

Applicant argues the 102 and 103 rejections citing that none of the references teach a high or a low pressurization device.

This is not found persuasive. As shown below the rejections read on applicant's claim language.

Specification

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2. The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an adequate written description of the invention and as failing to adequately teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure. The reasons are the same as those presented in the prior Office action.

Claim Rejections - 35 USC § 101

3. Claims 1, 4-6 and 10-16 are rejected under 35 U.S.C. 101 because the invention as disclosed is inoperative and therefore lacks utility for the reasons set forth in section the prior Office action.

Note the discussion of applicants' arguments in section 1 above.

As pointed out in section 1 above, applicants' invention involves a concept or expedient which has become known in the art as "cold fusion".

Accordingly, the documents cited by the examiner in regard to the inoperability and lack of utility of such "cold fusion" systems, are clearly germane to the patentability of applicants' claims. As pointed out in section 1 above, the examiner has provided reasons why applicants' arguments are not sufficient to overcome the documentary evidence provided by the examiner.

Applicants' attention is directed to page 89 of Huizenga (I). Said page 89 reproduces the conclusion of the final report of the DOE/ERAB panel on cold fusion. Conclusion (1) states that there is no "convincing evidence that useful sources of energy will result from the phenomena attributed to cold fusion".

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Applicants attention is directed to the case law on page 16, of the prior Office action, in support of the examiner's "position" that where the utility of the claimed invention is based upon allegations that border on the incredible or allegations that would not be readily accepted by a substantial portion of the scientific community, sufficient substantiating evidence of operability must be submitted by applicant.

The above "position" which is well supported by case law, is considered as clearly being applicable against applicants claimed invention, particularly in view of the comments in the articles cited above and in the 8/10/97 Office action, concerning the inoperability (and hence lack of utility) of such "cold fusion systems".

Claim Rejections - 35 USC § 112

4. Claims 1, 4-6 and 10-16 are rejected under 35 U.S.C. 112, first paragraph, for the reasons set forth in the objection to the specification in the prior Office action and above in section 1.

5. Claims 1, 4-6 and 10-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support in the original disclosure for "the absorption part being positioned to enclose said structure body".

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6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 4-6 and 10-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The reasons are the same as those set forth in section 12a and 12c of the prior Office action. 12b was overcome by the amendment to the claims.

As set forth previously claims 1, 4-6, 10 and 12-16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted element is: a heater (see specification page 18) required to initiate the alleged transmutation reaction. Without said heater the alleged reaction never takes place.

Claim 1 refers to transmutation material binding device; however, the transmutation material in question is not actively claimed. Accordingly, the meets and bounds of the claim are indefinite. Again it appears that claim 5 should be incorporated into claim 1.

B. The terms "high pressurization, low pressurization and predetermined pressure" are relative terms which renders the claims indefinite. The term "high pressurization, low pressurization and predetermined pressure" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite

degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. As set forth in the 112, first rejections in the prior office action and above no parameters are given of the necessary values to provide a reproducible experiment. Thus, the pressure required is indefinite.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 4-6 and 10-16 are rejected under 35 U.S.C. 102(b) as anticipated by Iwamura et al (Detection of Anomalous elements, x-rays, and excess heat induced by continuous diffusion of deuterium through multilayer cathode (Pd/CaO/Pd), 7th International Conference on Cold Fusion, p. 167, 1998).

Iwamura et al sets forth an apparatus inherently capable of meeting applicants' claimed inventive concept. That is a nuclide transmutation device comprising: a layered structured body made of palladium/CaO(work function equal to or less than 3 eV)/palladium, an absorption and desorption part surrounding said structured body, a high pressure side on one side of said structured body, a low pressure side on the other

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side of said structured body and a transmutation material binding device that binds material onto the surface of the structured body.

See figures and entire article.

Statements of intended use, field of use, "adapted to/for", "configured to/for" clauses, etc. are essentially method limitations or statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon (i.e., transmutation material) does not serve to limit an apparatus claim.

While patent drawings are not drawn to scale, relationships clearly shown in the drawings of a reference patent cannot be disregarded in determining the patentability of claims. See In re Mraz, 59 CCPA 866, 455 F.2d 1069, 173 USPQ 25 (1972).

Note that limitations which are considered to be inherent in a reference, note the case law of In re Ludtke, 169 U.S.P.Q. 563; In re Swinehart, 169 U.S.P.Q. 226; In re

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Fitzgerald, 205 U.S.P.Q. 594; In re Best et al, 195 U.S.P.Q. 430; and In re Brown, 173 U.S.P.Q. 685, 688.

11. Claims 1, 4-6 and 10-16 are rejected under 35 U.S.C. 102(a) as being anticipated by Sakano et al (JP 2000-042388).

Sakano et al sets forth an apparatus inherently capable of meeting applicants' claimed inventive concept. That is a nuclide transmutation device comprising: a layered structured body (11-13) made of palladium/CaO(work function equal to or less than 3 eV)/palladium, an absorption (14) and desorption (15) part surrounding said structured body, a gaseous high pressure side on one side of said structured body, a gaseous low pressure side on the other side of said structured body and a transmutation material binding device that binds material onto the surface of the structured body.

See figures and entire article.

Statements of intended use, field of use, "adapted to/for", "configured to/for" clauses, etc. are essentially method limitations or statements of intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

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Note that limitations which are considered to be inherent in a reference, note the case law of In re Ludtke, 169 U.S.P.Q. 563; In re Swinehart, 169 U.S.P.Q. 226; In re Fitzgerald, 205 U.S.P.Q. 594; In re Best et al, 195 U.S.P.Q. 430; and In re Brown, 173 U.S.P.Q. 685, 688.

12. Claims 1, 4-6 and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakano et al (JP 2000-042388) in combination with Iwamura et al (JP 2000-258573).

Sakano set forth applicants' inventive concept (see section 16 above); however, if not apparent that Sakano sets forth a transmutation material layer then Iwamura ('573) teaches the layering of transmutation material on hydrogen absorbing material to promote nuclear reactions in the same field of endeavor (see abstract and columns 1 and 2 (note Cs, Sr, etc.)).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the hydrogen absorber structure of Sakano to have included the transmutation material/nuclear reaction material teachings of

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Iwamura ('573), to gain the advantages thereof (i.e., reduce radioactive waste, excess energy production, etc.), because such results are in no more than conventionally known cold fusion solid material alternatives for inducing nuclear reactions.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack W. Keith whose telephone number is (703) 306-5752. The examiner can normally be reached on Monday-Thursday 6:30-5 p.m., with Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jack W. Keith
Primary Examiner
Art Unit 3641

Jwk
June 30, 2004